

Remarks/Arguments:

The rejection of Claims 10-17 as anticipated by Kalina in U.S. Patent 4,548,043 (hereinafter Kalina '043) is respectfully traversed. Kalina '043 teaches and claims an entirely different method, and differently connected components, than the method and apparatus of the present application.

It should be noted that the invention described and claimed in the present application makes use of components, such as feed pumps and heat exchangers (including recuperators, pre-heaters, superheaters, etc., which are ubiquitous in heat utilization and power generating applications. The mere presence of such components in the description or embodiment of one process or apparatus does not automatically render any other process or application employing such components unpatentable under 35 USC 102 or 103. The novelty of a process or apparatus may lie in the means by which the generic components are interconnected and operated.

In descriptions of processes, differing terminology may be used to refer to mechanical components which are essentially similar in function. Examples of such terminology variations may be found in Kalina '043, which discloses a "preheater" that functions as a "recuperator"; recovering heat from a largely liquid fluid stream in a manner to reduce energy loss from the system; and in the present application which discloses a "pre-heater" that functions as a "pre-boiler", fully vaporizing working fluid before entering the heater in a manner that re-distributes heat flow but has no influence on energy loss from the system. All such components--preheater, recuperator and pre-boiler--are essentially heat exchangers; the different terminology reflects the difference in how they are operated in the processes under discussion.

The fundamental difference between the Kalina method and apparatus (as described in Kalina '043 cited hereinabove as well as a number of other patents to Kalina, all of which are disclosed in the present patent application) and that of the present invention is that Kalina separates the initially heated working fluid (which like the invention of present application may comprise an ammonia-water solution) into a plurality of sub-streams of differing $\text{NH}_3\text{-H}_2\text{O}$ ratio. These sub-streams undergo different further processing from one-another; some of the streams are recombined at a later stage in the process, others are returned through one or more heat exchangers. In the invention that is the subject of the present patent application, by contrast, the entirety of the working fluid flows through a single process stream, with no separation into differently processed sub-streams.

This separation of the working fluid into sub-streams is the crux of the Kalina process, as disclosed in the above-referenced Kalina '043 as well as the other heretofore disclosed patents to Kalina. Reference to the centrality of this concept to the Kalina invention may be found, *intra alia*, throughout Kalina '043: Abstract, "working fluid fractions of differing compositions are generated,"; Claims 1, 3 and 4; the objectives of the invention, beginning at C2L8; in the detailed

description of the invention, for example beginning at C8L25; the discussion beginning at C9L7; the discussion beginning at C13L30.

In the invention that is the subject of the present patent application, as described therein and as summarily illustrated in Figures 1 and 3-5, the entirety of the working fluid is processed in a single continuous stream. There is no separation into separately processed sub-streams. Claims 10 and 12-17 are amended herein to particularly point out and distinctly claim a process differing fundamentally from that described and claimed in Kalina '043, and particularly pointing out and distinctly claiming apparatus not described, taught or suggested in Kalina '043.

The differences between the Kalina process, as disclosed and claimed in Kalina '043, as well as other patents to Kalina made of record in the present application, and the process described and claimed in the present application is reflective of the overall intent of the inventors. Kalina developed a process to improve thermodynamic efficiency of large power plants, where it might be hoped that the added capital and operating costs of the improved process would be compensated by the improved efficiency (i.e., increased output in KW-hr/unit of fuel). The process of the present invention was developed as a simplified process for relatively small installations, with lower capital requirements, and lower operating costs, especially due to eliminating the need for a licensed operator around the clock. Thermodynamic efficiency was less important, since the process was designed to use waste biomass, which is in plentiful supply in areas where such industries as timber harvesting and processing and pulp and paper mills are prevalent, but nevertheless is in insufficient collected quantities to justify large power plants.

It is believed that the amendments made herein will establish the patentable distinction between the process of Kalina '043 and the process and apparatus of the present application, and overcome the rejections of the Office Action of August 23, 2006 and place the present application in condition for allowance.